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ABSTRACT

This collection of three environmental education newsletters includes activities and issues of international environmental education for 1976. The first issue contains discussion of the Belgrade Charter adopted at the International Environmental Education Workshop at Belgrade, October 1975. The second issue deals with regional plans, projects, and meetings; discusses the Belgrade Workshop recommendations; and reviews environmental education workshop experiments around the world. The third issue discusses the role of environmental education and the community. (RE)

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UNESCO-UNEP ENVIRONMENTAL EDUCATION NEWSLETTER

Vol. I, No. 1. January 1976

U S DEPARTMENT OF HEALTH EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION

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There is no force greater than that of an idea whose time has come.
—Victor Hugo.

An historic moment produced an historic document. Adopted unanimously at the close of the 10-day International Environmental Education Workshop at Belgrade, 13-22 October 1975, subject to the evolution of inevitable change and improvement, the Belgrade Charter has laid down the principles and established the guidelines for the world-wide environmental education of a generation which spans the earth.

No statement could be more fitting for the first number of *Connect*, the new medium for the international exchange of information on environmental education.

The Belgrade Charter

A Global Framework for Environmental Education

A. Environmental Situation

Our generation has witnessed unprecedented economic growth and technological progress which, while bringing benefits to many people, have also caused severe social and environmental consequences. Inequality between the poor and the rich among nations and within nations is growing and there is evidence of increasing deterioration of the physical environment in some forms on a world-wide scale. This condition, although primarily caused by a relatively small number of nations, affects all of humanity.

The recent United Nations Declaration for a New International Economic Order calls for a new concept of development—one which takes into account the satisfaction of the needs and wants of every citizen of the earth, of the pluralism of societies and of the balance and harmony between humanity and the environment. What is being called for is the eradication of the basic causes of poverty, hunger, illiteracy, pollution, exploitation and domination. The previous pattern of dealing with these crucial problems on a fragmentary basis is no longer workable.

It is absolutely vital that the world's citizens insist upon measures that will support the kind of economic growth which will not have harmful repercussions on people; that will not in any way diminish their environment and their living conditions. It is necessary to find ways to ensure that no nation should grow or develop at the expense of another nation and that the consumption of no individual should be increased at the expense of other individuals. The resources of the world should be developed in ways which will benefit all of humanity and provide the potential for raising the quality of life for everyone.

We need nothing short of a new global ethic—an ethic which espouses attitudes and behaviour for individuals and societies which are consonant with humanity's place within the biosphere; which recognizes and sensitively responds to the complex and ever-changing relationships between humanity and nature and between people. Significant changes must occur in all of the world's nations to assure the kind of rational development which will be guided by this new global ideal—changes which will be directed towards an equitable distribution of the world's resources and more fairly satisfy the needs of all peoples. This new kind of development will also require the maximum reduction in harmful effects on the environment, the utilization of waste materials for productive purposes, and the design of technologies which will enable such objectives to be achieved. Above all, it will demand the assurance of perpetual peace through coexistence and cooperation among nations with different social systems. Substantial resources for reallocation to meet human needs can be gained through restricting military budgets and

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reducing competition in the manufacture of arms. Disarmament should be the ultimate goal.

These new approaches to the development and improvement of the environment call for a reordering of national and regional priorities. Those policies aimed at maximizing economic output without regard to its consequences on society and on the resources available for improving the quality of life must be questioned. Before this changing of priorities can be achieved, millions of individuals will themselves need to adjust their own priorities and assume a personal and individualized global ethic—and reflect in all of their behaviour a commitment to the improvement of the quality of the environment and of life for the world's people.

The reform of educational processes and systems is central to the building of this new development ethic and world economic order. Governments and policy-makers can order changes, and new development approaches can begin to improve the world's condition—but all of these are no more than short-term solutions, unless the youth of the world receives a new kind of education. This will require new and productive relationships between students and teachers, between schools and communities, and between the education system and society at large.

Recommendation 96 of the Stockholm Conference on the Human Environment called for the development of environmental education as one of the most critical elements of an all-out attack on the world's environmental crisis. This new environmental education must be broad based and strongly related to the basic principles outlined in the United Nations Declaration on the New International Economic Order.

It is within this context that the foundations must be laid for a world-wide environmental education programme that will make it possible to develop new knowledge and skills, values and attitudes, in a drive towards a better quality of environment and, indeed, towards a higher quality of life for present and future generations living within that environment.

B. Environmental Goal

The goal of environmental action is:

To improve all ecological relationships, including the relationship of humanity with nature and people with each other.

There are, thus, two preliminary objectives:

1. For each nation, according to its culture, to clarify for itself the meaning of such basic concepts as "quality of life" and "human happiness" in the context of the total environment, with an extension of the clarification and appreciation to other cultures, beyond one's own national boundaries.

2. To identify which actions will ensure the preservation and improvement of humanity's potentials and develop social and individual well-being in harmony with the biophysical and man-made environment.

C. Environmental Education Goal

The goal of environmental education is:

To develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones.

D. Environmental Education Objectives

The objectives of environmental education are:

1. **Awareness:** to help individuals and social groups acquire an awareness of and sensitivity to the total environment and its allied problems.

2. **Knowledge:** to help individuals and social groups acquire basic understanding of the total environment, its associated problems and humanity's critically responsible presence and rôle in it.

3. **Attitude:** to help individuals and social groups acquire social values, strong feelings of concern for the environment and the motivation for actively participating in its protection and improvement.

4. **Skills:** to help individuals and social groups acquire the skills for solving environmental problems.

5. **Evaluation ability:** to help individuals and social groups evaluate environmental measures and education programmes in terms of ecological, political, economic, social, esthetic and educational factors.

6. **Participation:** to help individuals and social groups develop a sense of responsibility and urgency regarding environmental problems to ensure appropriate action to solve those problems.

E. Audiences

The principal audience of environmental education is the general public. Within this global frame, the major categories are:

1. **The formal education sector:** including pre-school, primary, secondary and higher education students as well as teachers and environmental professionals in training and retraining;

2. **The non-formal education sector:** including youth and adults, individually or collectively, from all segments of the population, such as the family, workers, managers and decision-makers, in environmental as well as non-environmental fields.

F. Guiding Principles of Environmental Education Programmes

The guiding principles of environmental education are:

1. Environmental education should consider the environment in its totality—natural and man-made, ecological, political, economic, technological, social, legislative, cultural and esthetic.

2. Environmental education should be a continuous life-long process, both in-school and out-of-school.

3. Environmental education should be interdisciplinary in its approach.

4. Environmental education should emphasise active participation in preventing and solving environmental problems.

5. Environmental education should examine major environmental issues from a world point of view, while paying due regard to regional differences.

6. Environmental education should focus on current and future environmental situations.

7. Environmental education should examine all development and growth from an environmental perspective.

8. Environmental education should promote the value and necessity of local, national and international cooperation in the solution of environmental problems.

Belgrade Workshop Proceedings

Most striking was the sense of unanimity—reported by such newspapers as the *International Herald Tribune* of Paris and *The Washington Post*—cutting across national and cultural frontiers among the 96 participants and observers from some sixty countries, East and West, North and South, at the Belgrade Workshop, 13-22 October 1975. They were facing together the common problem of the environment of their common—one and only—earth. Their common goal was to frame the global pattern *(left)* of environmental education for all ages, in and out of school.

The *participants* themselves were equally distributed among the five Unesco regions—Africa, Arab States, Asia, Europe-North America and Latin America. They represented all levels of formal and non-formal education—primary, secondary and tertiary, youth and adult—as well as major international organizations concerned with environmental education—both government and non-government.

Keynotes were sounded in the opening speeches by Dr. M. Tolba, Deputy Executive Director of the United Nations Environment Programme (UNEP), Assistant Director General for Education Leo Fernig of Unesco and Trpe Jakovlevski, member of the Federal Executive Council of Yugoslavia, host country of the Unesco-UNEP Workshop. (Institutional host was Belgrade University's Centre for International Studies with Professor B. Jankovic at its head.)

Dr. Tolba spoke in terms of "development and social justice," of education in general as "at the heart of the process of development" and of environmental education as a "principal instrument for realizing new concepts of growth and progress." Mr. Fernig brought environmental education, as an integral part of all educational planning, into his concept of a new economic order—one of diversity and cultural variety, "where there will be a carefully preserved balance and harmony of humanity and nature, which means, in turn, programming lifelong education." Mr. Jakovlevski developed the social and political aspects of environmental education, emphasizing as one of its goals the "preservation of the human environment as a component part of the system of social values, building it into our way of thought, of feeling and behaviour."

The principal aims of the Belgrade Workshop were (1) to review and discuss the trends and emerging issues in environmental education, and (2) to formulate, on this basis, guidelines and recommendations for furthering environmental education internationally. Activities of this ten-day working conference revolved around its workings groups, in which all participants were involved on a cross-cultural multinational basis. A set of fifteen trend papers offered a starting point for the discussions. In addition, there were meetings of regional groups to help prepare for regional seminars, projects and programme actions following the Belgrade conference.

Besides the fifteen trend papers—inputs for the Belgrade Workshop—there were Unesco-UNEP consultants' missions and reports and a preliminary, but elaborate, world survey of environmental education needs and priorities in preparation for the Belgrade conference.

Inputs for Belgrade

The *trend papers* served as working documents, describing the state-of-the-art in environmental education in all parts of the world, covering many of its aspects and all of its age levels *(see box on page 4)*.

Authors came from fourteen countries—Yugoslavia, Sierra Leone, Argentina, Japan, Italy, Sri Lanka, the Netherlands, Czechoslovakia, Sweden, Egypt, Venezuela, the United States of America, the United Kingdom and Canada. A primary objective was the identification of relevant writings from every corner of the earth published during the last four or five years. Older materials of enduring significance were added by the hundreds of individuals solicited by letter because of their special professional interest in environmental education.

All items of relevant environmental education literature were collected and annotated by Dr. J. David Lockard in a cumulative bibliography and made available to each trend paper author. An enlarged and revised edition is being prepared for wider use.

Each of the working groups extensively discussed the transferability of the concepts—and the accuracy of the information of the trend papers—in terms of particular cultural regions. Participants contributed case histories from their own countries or areas. Based upon these comments and contributions, the authors are now thoroughly revising their preliminary trend papers, which will be published in the fall of 1976 as "Trends in Environmental Education," possibly in five languages—English, French, Spanish, Russian and Arabic. In three or four years, the entire process will be repeated in order to produce a second edition, entitled "New Trends in Environmental Education."

The *consultants' missions* involved twelve environmental education experts, who conducted individual trips of at least one week in 81 of 99 Unesco Member States of the developing world—30 nations of Africa, 24 in Latin America, 13 in Asia and 14 in the Arab world. They assisted Ministers of Education and their working teams in replying to a Unesco questionnaire on their nations' needs and priorities with regard to resources for environmental education. They identified ways and means for providing assistance to the Member States visited. They gathered information essential to the new International Environmental Education Programme, specifically identifying environmental educators and others similarly concerned, environmental education organizations, programmes and materials (with an assessment of their quality and shortcomings). They established links at the grassroots level vital for the programme and its international network. Each of the twelve wrote a full country-by-country report, incorporating the gathered information and its evaluation. All reports are on file at the Unesco office as historic core documents for the international environmental education programme.

The preliminary world survey of environmental education needs and priorities aimed at providing information permitting the formulation of effective strategies for action at the global, regional and national levels. It was principally based on the 177-item questionnaire which was sent to Unesco's 136 Member States and which obtained the remarkably high response of 82%. Supplementary information came from the consultant mission reports and official UN statis-

Working papers discussed at the Belgrade Workshop, October 1975

The nature and philosophy of environmental education: goals and objectives. Allen A. Schmieder, United States Office of Education, Division of Educational Systems Development, 7th and D Streets S.W. (Room 3052), Washington DC 20202 (United States).

Some Thoughts on the Philosophy of Environmental Education. Adriano Buzzatti-Traverso (Italy), Senior Scientific Adviser, UNEP, P.O. Box 30552, Nairobi, (Kenya).

Environmental education at the pre-school and primary level. Jinapala Alles (Sri Lanka) and A. Chiba (Japan), Unesco-Unicef Unit, Department of Educational Planning and Financing, Unesco, 7 place de Fontenoy, 75700 Paris (France).

Environmental education at the secondary school level. Arturo Eichler, Apartado 256, Merida (Venezuela).

Environment education programmes for out-of-school youth. David Withrington, 6 Sutton Court Mansions, Grove Park Terrace, London, W. 4 (United Kingdom).

Environmental education at the tertiary level for general students. Edward W. Weidner, Chancellor, The University of Wisconsin at Green Bay, and Robert Cook, Associate Professor of Environmental Control, The University of Wisconsin at Green Bay, Green Bay, WI 54302 (United States).

Environmental education at the tertiary level for teachers. Saber Selim, Director, Science Department, ALECSO, Dokki Square, 109 Tahir Street, Cairo (Egypt).

Environmental studies for specialists in non-environmental fields. Michel Maldague, Université Laval, Programme Interdisciplinaire en Aménagement du Territoire et Développement Régional, Cité Universitaire, Quebec 102 (Canada).

Environmental education programmes for adults. Lars Emmelin, Environmental Studies Programme, Helgonavägen 5, 223 62 Lund (Sweden).

Methodologies of environmental education. David Wolsk, Faculty of Education, University of Victoria, Victoria, British Columbia (Canada).

Instructional resources for environmental education. Jan Cerovsky, Statni Ustav Pamatkove Pece. A Ochrany Prirody, 118 01 Praha 1, Mala Strana, Valdstejnske, Nam C.1. (Czechoslovakia).

Learning environments for environmental education, Johannes Goudsward, The Netherlands State Committee on Environmental Education, Jan van Loonslaan 20a, Rotterdam-3001 (Netherlands), and Mirta de Teitelbaum (Argentina), Consultant, Environmental Education Section, Unesco, Paris (France).

The evaluation of environmental education materials and learning. Dean Bennett, Maine Environmental Education Project, Intermediate School District, Yarmouth ME 04096 (United States).

National procedures for implementing environmental education: a comparative study. Keith Wheeler, City of Leicester College of Education, Scroptoft, Leicester. LE7 9SU (United Kingdom).

International and regional co-operation, Hubert Dyasi, Science Education Programme for Africa, P.O. Box 9169 Airport, Accra (Ghana).

tical documents. The most striking findings of the preliminary study follow *(see table on page 5)* :

Globally, the great majority of countries (63%) has relatively high levels (greater than 3.5 on the questionnaire 5-point scale) of environmental education needs.

Only seven countries show a very low level of general environmental education needs (about 1.0 on the scale).

Almost all (84%) of the countries with a high level (over 3.5 on the scale) of general environmental education needs are from Africa (31%), Latin America (26%), Asia (15%) and the Arab States (11%).

At the world level, the four educational sectors with the highest needs in general environmental education are, respectively: (1) primary education, (2) secondary education, (3) tertiary education and (4) out-of-school youth education.

The great majority of countries (63%) needs environmental education programmes of all types, formal and non-formal, more than any other kind of environmental education resource.

At the world level, the dominant environmental education needs are for (1) funds for innovation, (2) personnel and (3) programmes for in-school and out-of-school activities.

At the next lower level of environmental education needs (considerably below *funds, personnel* and *programmes*) are (1) organizations and associations active in environmental education and (2) instructional materials.

The lowest level of needs, none the less important, is for (1) physical facilities and (2) legislation for environmental education.

The *next phase* of the world survey of environmental education needs and priorities involves a

MAJOR WORLDWIDE AND REGIONAL ENVIRONMENTAL EDUCATION (EE) PROBLEMS, IDENTIFIED BY EDUCATIONAL SECTOR

| Educational sector \ EE resources by world and region | WORLD | | | | | | | 1 AFRICA | | | | | | | 2 ARAB STATES | | | | | | | 3 ASIA | | | | | | | 4 LAT. AMERICA | | | | | | | 5 NO. EUROPE | | | | | | | 6 WEST EUROPE | | | | | | | 7 EAST EUROPE | | | | | | | 8 STH. EUROPE | | | | | | | 9 NO. AMERICA | | | | | | |
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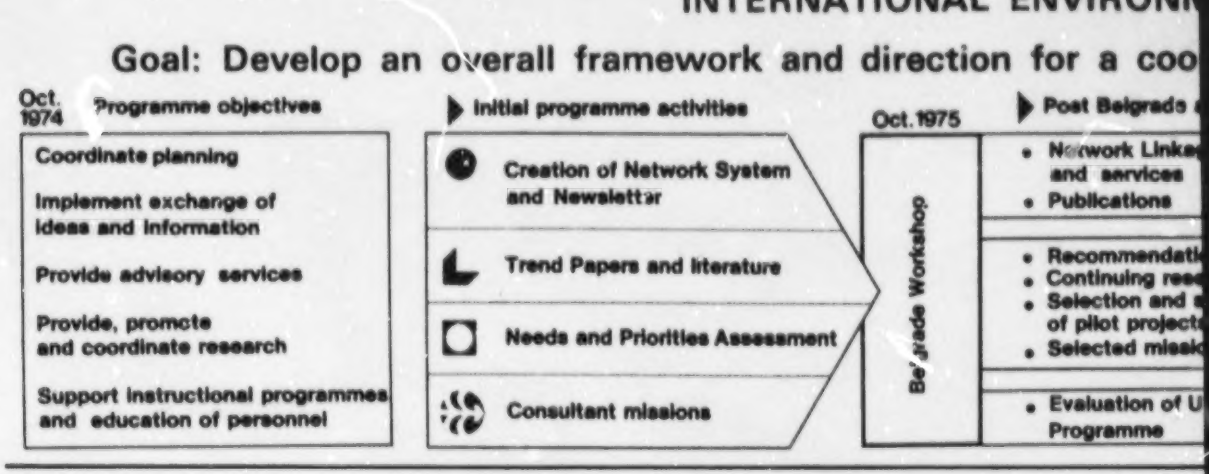

Conference on Conservation of Nature and Natural Resources in South-East Asia, Bangkok, Thailand, 29 November-4 December 1965. The major focus of this conference, conducted by the International Union for the Conservation of Nature and Natural Resources (IUCN) in cooperation with the World Wildlife Fund (WWF), was on ways to further environmental education, particularly through (1) education in school, (2) public education and (3) training in conservation.

International Working Meeting on Environmental Education in the School Curriculum, Carson City, Nevada, U.S.A., 20 June-11 July 1970. The specific aim of this workshop, sponsored by IUCN in cooperation with Unesco, was to bring together specialists responsible for curriculum design at primary and secondary levels. Discussion centred on innovative ideas especially usable in environmental conservation education.

Workshop on Environmental Education at the University Level, Tours, France, 5-8 April 1971. The Organization for Economic Co-operation and Development (OECD) hosted this workshop, which analysed the urgency and need for new teaching programmes at the university level in environmental education.

European Working Conference on Environmental Conservation Education, Rüshlikon, Switzerland, 15-18 December 1971. This first completely European conference of its kind was organized by IUCN in cooperation with WWF and was attended by a total of 109 participants from 21 European countries. Scientists, administrators and educators predominated. They formulated specific recommendations for projects and programmes in environmental education which related to primary and secondary levels, teacher training, out-of-school and higher education.

International Seminar on Environmental Conservation Education in the School Curriculum in East-European Countries, Kroscienko, Poland, 22-28 June 1972. The aim of this seminar, sponsored by IUCN, was to develop further the conclusions of the Rüshlikon conference (see above).

United Nations Conference on the Human Environment, Stockholm, Sweden, 5-16 June 1972. The major event for those concerned about the world's environment, this UN Conference resulted in the International Environmental Education Programme, thanks to Recommendation 96 "... that the Secretary General, the organizations of the UN system, especially Unesco, and the other international agencies concerned, should, after consultation and agreement, take the necessary steps to establish an international programme in environmental education." Representatives of 113 Member States participated. Observers from over 400 intergovernmental and non-governmental organizations were present. Among the 109 recommendations for action there were many which directly or indirectly relate to and support environmental education.

International Workshop on Environmental Studies in Higher Education and Teacher Training, London, Ontario, Canada, 5-7 September 1972. Organized by a North American committee in cooperation with IUCN, this workshop's working groups brought forward statements and recommendations and proposed unresolved issues for wider discussion by those in higher education, teacher and professional training.

Eastern Africa Youth Meeting on Environmental Conservation, Nairobi, Kenya, 4-16 March 1974. Sponsored by Unesco, WWF, the International Youth Federation and the African Wildlife Leadership Federation, this meeting brought together student and youth leaders to promote an understanding of—and active involvement in—environmental conservation. Participants from eight English-speaking East African countries discussed environmental problems, adopting recommendations and suggesting possible solutions and actions in their regard.

International Working Meeting on Environment in Educational Programmes, Cairo, Egypt, 28 April-2 May 1974. Sponsored by the Arab League Cultural and Scientific Organization (ALECSO) together with UNEP, this meeting primarily considered a programme of work for an ALECSO committee preparing an overall plan for environmental education, in all its aspects, from general education to source books, for the Arab States.

Pilot Seminar on Environment Education Methodology in East Africa, Mombasa, Kenya, 27 August-4 September 1974. Organized by UNEP, IUCN and the World Confederation of Organizations of the Teaching Profession (WCOTP), this seminar was designed to field test, in the context of East Africa, the environ-

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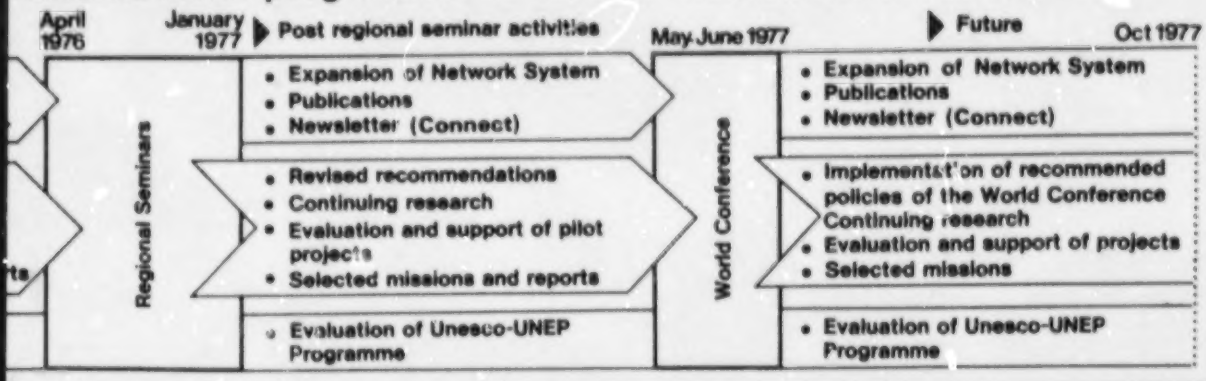
international programme to further environmental education



mental education methodology developed by TETE (Total Education in the Total Environment), a non-governmental, U.S.A.-based educational research group. The major purpose was to bring together environmental experts and educational specialists to develop techniques and teaching materials for spreading understanding of environmental problems on the African continent.

Seminar on Education for the Conservation of Renewable Natural Resources in High School Curricula, Cordoba, Argentina, 16-25 October 1974. This seminar, attended by representatives of 10 international organizations, was conducted by the Centre of Ecology and Renewable Natural Resources, National University of Cordoba, in cooperation with the U.S. Foresta Institute for Ocean and Mountain Studies, the Argentine Secretary of State for Natural Resources and the Human Environment, IUCN and WWF. The seminar adopted a series of recommendations pertaining to curriculum content, pre-service teacher training and extra-curricular and/or out-of-school activities.

Dynamics of the International EE Programme

Acting upon Recommendation 96 of the Stockholm Conference, Unesco, in cooperation with UNEP, convened representatives from UN agencies, international non-governmental organizations and every region of the world to help construct a framework and map the direction of a cooperative programme to further environmental education internationally, involving the global reinforcement of existing programmes and the simultaneous initiation of new international efforts.

Planning a programme

As an outcome of this meeting of representatives, Unesco prepared and submitted a three-year project to UNEP which was approved in January 1975. The resulting international programme is designed to :

- facilitate the coordination, joint planning and pre-programming activities essential to the development of an international programme in environmental education;
- promote the international exchange of ideas and information pertaining to environmental education;
- coordinate research to better understand the various phenomena involved in teaching and learning;
- formulate and evaluate new methods, materials and programmes (both in-school and out-of-school, youth and adult) in environmental education;
- train and retrain personnel to adequately staff environmental education programmes;
- provide advisory services to Member States relating to environmental education.

Dynamic continuum

The general plan for developing the cooperative international programme was conceived as occurring in the following stages: (1) preparation of documents for an international workshop; (2) the Belgrade Workshop (October 1975); (3) initiating and evaluating environmental education within formal primary, secondary and tertiary education, youth (out-of-school) and adult programmes, based upon the Belgrade recommendations; (4) regional seminars; and (5) a world-wide Intergovernmental Conference (tentatively planned to be held in the USSR, spring 1977).

All phases have been viewed as interrelated elements of a dynamic continuum with each phase designed to fuel the next while drawing upon the preceding one. Participation by all involved is stressed in every phase.

Phase I

Belgrade Workshop documents consisted of the fifteen trend papers on all aspects of envrionmental education and a comprehensive report on information derived from the survey of needs and priorities within each of Unesco's 136 Member States. The documents incorporated pertinent information from consultant missions to 81 of Unesco's developing Member States. The trend papers and the world survey were made available as working documents to the Belgrade participants.

Phase II

The Belgrade Workshop reviewed the working documents and formulated guidelines and recommen-

dations for the overall, cooperative international programme of action for global environmental education. The state-of-the-art trend papers—currently being revised—together with the tentative guidelines and recommendations will serve as the working documents for regional seminars throughout the world. Reviewed, tested and refined, they will, in turn, become the major background documents for the Intergovernmental Conference planned in spring 1977. The Intergovernmental Conference will be devoted to the recommendation for adoption of governmental policies concerning environmental education.

Regional groups meeting at the Belgrade Workshop discussed the kinds of projects and programme activities which should be developed and supported. There are limited funds available in the Unesco-UNEP environmental education programme to assist in the financing of project proposals. Information will be provided in the next issue of *Connect* regarding the criteria for selection, the proposal format and the process to be followed in submitting project proposals. It is the aim of the Unesco-UNEP programme to assist in the funding of four to five projects in each region of the world over a period of the next eighteen months.

Belgrade's regional working groups also began preparatory plans for the seminars which will take place, at least one per region, by autumn of 1976. Some regional planning committees have since been formed. (Write *Connect* for latest developments in your region.)

The regional seminars will (1) review, evaluate and develop plans for implementing those recommendations of the Belgrade Workshop which have relevance to the respective regions; (2) prepare plans for regional participation in the Intergovernmental Conference of 1977; (3) develop ways and means of coordinating activities and resources among the various regions; (4) develop case studies on the lessons of environmental education, in terms of successes and failures, in the respective regions; and (5) contribute to the preparation of an international EE source book to give regions a more global perspective. A major working document will be the regional analysis of the Unesco world survey of environmental education needs and priorities for Member States.

Following the regional seminars, an expert meeting will be convened to review the findings of each seminar and make appropriate recommendations in preparation for the *Intergovernmental Conference on Environmental Education*. The Intergovernmental Conference will be a major, culminating activity of the International Programme. The purpose of the Conference, whose participants will consist largely of decision and policy makers in education, will be to arrive at policy recommendations which will enable Member governments individually to adopt national policies furthering environmental education. It is planned to include about 400 participants in all, excluding technical staff. In addition to recommendations from the regional seminars, pre-Conference documents will include a summarized history of regional activities in environmental education as well as the work already accomplished by Unesco, UNEP, IUCN and other organizations in the field.

Phase III

Implementation of recommended policies will follow the Intergovernmental Conference, as well as many activities initiated earlier. As can be noted from the *flow chart* on pages 6 and 7 of the International EE Programme, these activities constitute the establishment of (1) a comprehensive world network system and newsletter *(Connect)* to further the international exchange of ideas and information, needs and services, as well as (2) a mechanism for forming a regional network linking and promoting national activities.

There will be *continuing research* to (1) identify, sponsor, coordinate and promote research activities relating to the body of EE knowledge upon which programme design and development can best be based; and (2) to evaluate pilot EE programmes designed to implement recommendations resulting from the planned sequence of international meetings.

There will be *continuing support* of (1) existing experimental programmes and newly designed pilot projects involving innovative methods, materials and activities for all aspects and levels of environmental education, based on regional and world recommendations; (2) existing programmes and innovative designs for new teacher and leadership training projects, and the staffing of EE activities, based on the same recommendations; and (3) an intergovernmental organization to promote a faculty and/or student international EE exchange programme.

Besides the publishing of two editions of "Trends in Environmental Education," there will be publication and distribution of reports on research findings, on programme design, development and evaluation, and documents from the computerized network data bank.

The *long-range*, post-Intergovernmental Conference actions of the International EE Programme will involve more funds and support for action programmes from government and non-government bodies with a special effort made to identify and commit funding organizations and institutions throughout the world to new and existing EE developments. Since preservation and improvement of the world's environment is the goal, there is no end in view for the vital necessity of global EE efforts.

The International Environmental Education Network

Since the exchange of ideas and information, needs and services, is central to the success of environmental education on a global level, Unesco has underway a project to establish an *international network* of communication in cooperation with the International Referral System (IRS). About 4,000 names and addresses of individuals and organizations throughout the world actively involved in EE have already been recorded. More are solicited.

Objectives of the network system are (1) to encourage the exchange of information, ideas and experiences among those recorded in the network; (2) to link individuals and institutions providing services, publications and materials with those who have expressed needs; and (3) to facilitate the task of the International EE Programme in coordinating international EE activities.

The *first phase* in the creation of the network system is the ongoing identification of individuals and institutions engaged in environmental education, the collecting of detailed information on their activities,

needs and services, and the computerizing of the collected data. The stored information will be retrieved and published as an international reference book on EE resources—individuals, institutions, periodicals, funding bodies, etc.

The *second phase* will involve storage of information relating specifically to EE programmes and documents in the computer, so that bibliographies, abstracts, programme descriptions and the like may be easily retrieved and made available, probably as published printouts.

The *third phase* envisages selection of specific institutions in every region of the world to identify new (and revise existing) EE information and to assist in its diffusion. Overall coordination will be exercised by Unesco.

Establishing the described system is a long, complex procedure demanding the collaboration of all. It depends on complete, accurate information about individuals and institutions concerned with environmental education. Send *Connect* names and addresses.

Help

There's an urgent need for your contributions to the annotated, analytical and ongoing *International Bibliography on Trends in Environmental Education*. All EE printed materials — books and periodicals, entire or in part — are more than welcome, particularly from Eastern Europe, Asia, Africa, the Arab States and Latin America. A special edition of the bibliographical *Bulletin* of the International Bureau of Education (IBE) will be based on the new, augmented version and published in Spanish, French and English in a printing of 10,000 copies. The need for your contributions is immediate. Please send them soonest to:

Dr. J. David Lockard, Director
The International Clearinghouse
University of Maryland
College Park, Maryland 20742, U.S.A.

Dr. Lockard will return directly to you any material you wish to have back.

The Network's Newsletter: Connect

Creating a comprehensive network is a principal goal of the International EE Programme. The newsletter *Connect* has been conceived as that network's switchboard, providing the medium for an international exchange of information and ideas between people concerned about environmental education.

Commencing with this issue, *Connect* is also appearing in French as *Connexion* and in Spanish as *Contacto*. The English title derives from the British novelist E.M. Forster's appeal to people, "Only connect!" Its symbol derives from a cave painting of southeastern Spain, said to be 5,000 years old. You will have noted that *Connect's* symbolic human figure in the brown circle of the earth has a left, a right and what might be called a radical center. It stands North and South and reaches East and West, holding a rainbow-like arc of hope. It represents *Connect's* goal—to become a reader-to-reader forum.

The newsletter's quarterly appearance may become more frequent, depending on the need and response. Each issue will have a dominant theme, as, for instance, the Belgrade Workshop in this first issue. In addition there will be regular sections, above all the reader-to-reader exchange. *Connect* must reflect the field, not the office. For this, its complete dependence is on its correspondents in the field—you.

Connect's regular sections will contain news of Unesco headquarters, its plans and activities; UN agencies, especially UNEP; and other government and non-government organizations involved in environmental education. There will be news too of regional and national plans, projects and meetings, their successes and failures—and the reasons. Here your reports will be vital. We welcome, as well, capsule summaries and pertinent comment on curricula guides, books, articles, films and other printed or audio-visual materials for the section "Current and Choice."

Connect will try to be what it preaches: no pollution of the eye (no fatiguing black-on-white typography); it will be printed as far as possible on recycled paper (as with this and subsequent issues).

Besides being its correspondent, be its candid critic.

For communications regarding the International Environmental Education Programme:

Environmental Education Section
Division of Pre-University Science
and Technology Education
Unesco
7, Place de Fontenoy 75700 Paris, France

Division of Economic and Social Programmes
UNEP
P.O. Box 30552 Nairobi, Kenya

RECYCLE PAPER
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Connect

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Connect

UNESCO-UNEP ENVIRONMENTAL EDUCATION NEWSLETTER

Vol. I, No 2. April 1976

Regional Plans, Projects and Meetings

In cooperation with agencies of the UN system, particularly the United Nations Environment Programme (UNEP) and other international bodies, Unesco is taking an active role in helping to promote environmental education activities throughout the world.

Some major activities envisaged following the Belgrade International Workshop on Environmental Education, October 1975, and prior to the ministerial Intergovernmental Conference, planned for June 1977, are :

- the funding and execution of pilot projects in environmental education (EE) in every region of the world;
- the organization of regional meetings of EE experts and practitioners in each of these regions;
- the conducting of new research directed at obtaining EE information useful for improving programme design, development and evaluation;
- expansion and computerization of the international environmental education network;
- publication of (1) the fifteen revised trend papers prepared for the Belgrade Workshop on the state of environmental education—in many of its aspects and all of its age levels—throughout the world; (2) an annotated, analytical *International Bibliography on Environmental Education*, part of which will appear this year as a special edition of the Bulletin of the International Bureau of Education; and (3) a series of research findings, including a regional and sub-regional (country-by-country) analysis of the world's needs and priorities in environmental education.

Regional projects

Four or five pilot projects in the field of environmental education are to be financed by the Unesco-UNEP programme in each of the world's regions—Africa, Arab States, Asia, Europe, Latin America and North America. Projects may be global, regional, sub-regional or national. The projects to be selected will deal with these broad areas:

- programmes for youth and adults in and out of school
- programmes in teacher and leadership training
- the development of services, publications and materials in environmental education.

Funds for each project will be in the general range of $10,000 to $25,000.

To assist an applicant in the formal presentation of his or her project proposal, the Unesco environmental education staff has prepared a suggested model. It is flexible. Should some of its sections not apply to a proposal, the applicant is to feel free to adapt the model, using it only as a general guide. The important thing is that a proposal adequately present the essential features of the proposed project.

Consequently five sections of the "model project proposal" deal with these basic questions and the suggested form for replying to them: (1) What do you—the applicant—want to achieve? (2) How do you propose to achieve it? (3) How will you know whether or not your project, if selected, will have achieved it? (4) Who will help you to achieve it? (5) How much financial support are you requesting and for what purposes, that is, what is your proposed project budget?

Every project proposal received under the Unesco-UNEP programme will be reviewed by the Unesco environmental education staff and by UNEP. Due to the time required for thorough review, and perhaps for correspondence with the individual or institution submitting a proposal, several months may be expected to elapse before a final decision can be made.

Proposals mays be submitted at any time. There is no deadline. However, it is recommended that proposals be sent as soon as possible, in three copies, to:

Environmental Education Section
Unesco
7, place de Fontenoy
75700 Paris, France

Regional meetings

By late 1976, each region of the world will have held a meeting devoted exclusively to environmental education. The general purpose of these regional meetings is to bring together EE practitioners—in their personal capacity—from throughout a region to:

- identify and discuss regional environmental education activities;
- review the guidelines and recommendations of the Belgrade Workshop (see *Connect*, January 1976) so as to revise them in the light of regional EE needs;
- promote the exchange of ideas and information in order to strengthen regional networks and cooperation in environmental education;
- formulate strategies of further action in environmental education at the regional level.

A parallel purpose is to orient decision makers, curriculum planners and experienced educators in other areas—many of whom will be among the participants—to environmental education concepts and methodologies.

Background documents provided by Unesco will include: (1) the fifteen revised trend papers prepared for the Belgrade Workshop; (2) details and analysis of the world-wide survey of EE needs and priorities at the global, regional, sub-regional and country levels; and (3) information abstracted from the reports of consultants on mission to the regions concerned. A full-time Unesco staff member will be available for the coordination of all regional meetings.

Groups in a number of regions are in the process of calling a planning meeting at which they will (1) elect a chairperson for the planning committee, (2) discuss the goals, objectives and purposes of their regional meeting; and (3) establish its time, place and agenda.

Individuals and organizations interested in their own region's environmental education meeting should contact the regional organizer. Relevant information is contained in the table below.

Regional Meetings on Environmental Education 1976

Region	*Meeting Place (Tentative)*	*Duration*	*Date*	*Information Center*
Africa	Brazzaville, People's Republic of the Congo	1 week	Sept. 1976	B. Kamian, Director Unesco Regional Office for Education for Africa B.P. 3311 Dakar, Senegal
Arab States	Kuwait or Cairo	1 week	Oct. 1976	Ch. Kemal Reheem, Chief Unesco Regional Office for Science and Technology for the Arab States 8, Abdel Rahman Fahmy Street Garden City, Cairo, Egypt
Asia	Bangkok, Thailand	1 week	Sept./Nov. 1976	V. G. Podoinitsin, Director Unesco Regional Office for Science and Technology for South and Central Asia Unesco House 40, B. Lodhi Estate New Delhi, India
Europe	Helsinki, Finland	4 days	11-15 Oct. 1976	Ms. Kristi Wartiovaara Department of International Relations Ministry of Education Rauhankatu 4 00170 Helsinki, Finland
Latin America	Bógota, Colombia	1 week	Sept./Nov. 1976	S. Romero Lozano, Director Unesco Regional Office for Education for Latin America and the Caribbeau Region P.O. Box 3187 Santiago, Chile
North America	St. Louis, Missouri, U.S.A.	4 days	5-8 Oct. 1976	James Aldrich, Executive Director The Alliance for Environmental Education, Inc. 1785 Massachusetts Avenue, NW Washington, D. C., U.S.A.

By Way of Clarification

Due to the confusion in the terms "environmental education" and "environmental training," it seems increasingly necessary to distinguish between the two, so as to be more effective in both. It is a useful distinction, since the kind of education and training involved in each case is different—in terms of instruction, programme, content and methodology.

Fortunately the distinction has been made clearer as a result of action taken by the UN Environment Co-ordination Board (ECB) during its Fifth Session in Geneva, 11-12 December 1975, and at the Belgrade Workshop. In essence, these are the differentiations which may be drawn:

a. General environmental education may be viewed as primarily concerned with the education of all citizens—providing them with an awareness of environmental problems in their daily lives and the knowledge, skills and commitment to work toward their

solutions. It is directed at people of all age levels, not only in all types and categories of formal education (including pre-school, primary, secondary and higher education students as well as teachers), but also in various non-formal programmes (including those for youth and adults, individually and collectively, from all segments of the population).

b. Environmental education of particular groups is used to refer to professionals including engineers, planners, architects, decision-makers, lawyers, medical doctors, trade union leaders, etc., who need to be made more sensitive to environmental matters and their implications because of the consequences of their professional actions and decisions in this regard.

c. Environmental training refers to the specialized training of such professionals and practitioners as foresters, biologists, hydrologists, oceanographers, ecologists, etc.

Report on the Belgrade Workshop Recommendations

A number of the 100-odd recommendations from the International Belgrade Workshop on Environmental Education, 13-22 October 1975, are on their way to their appropriate target groups—UN agencies and other international bodies. Staff members of Unesco will shortly be meeting with these organizations concerning their implementation. A sorting mechanism will be established for selecting and forwarding the Workshop recommendations not designed for immediate action to the regional meetings for consideration, review and regional action.

Following the regional meetings, an expert gathering will review the findings of each meeting and bring forward recommendations for submission to the Intergovernmental Conference on Environmental Education, scheduled for spring 1977. The goal of this Conference, whose participants will be decision and policy makers in education, is to arrive at policy recommendations enabling Member governments to adopt national policies furthering environmental education in their countries.

The recommendations, at the present stage, are not closed to additions. They are based on problem areas defined by working groups of the Belgrade Workshop, which benefited from: (1) the Unesco world survey of EE needs and priorities, (2) consultant missions to Member countries, (3) proceedings of previous international conferences on environmental education, (4) the fifteen trend papers prepared for the Workshop, and (5) the experiences of the Workshop participants themselves.

Problem areas defined

A clear statement of the problem, it is often said, is half the solution. The problem areas in environmental education, as defined above, led directly to the Belgrade Workshop recommendations. The nine problem areas follow:

A. Environmental Education (EE) at the International Level

There is a need for: (1) greater *coordination* of EE activites at the international level; (2) an international *exchange of information* in different languages on all aspects of EE, both in-school and out-of-school, with due respect for national, cultural and environmental differences; and (3) the organization of an international *exchange of EE teachers and students.*

B. Environmental Education at the Regional and Sub-Regional Levels

There is a need to: (1) establish *regional and sub-regional EE centers* to collect information about existing EE programmes, initiate EE study groups, programmes and training courses, as well as coordinate the development and diffusion of all aspects of EE at the regional level, with due consideration of local conditions; and (2) launch *pilot EE programmes or projects* with a regional focus.

C. Environmental Education at the National and Local Levels

There is a need for: (1) greater *coordination* within nations among the various government and non-government bodies working in, or associated with, the field of EE; (2) *legislation* to provide sufficient backing for EE at the national and local levels; and (3) *reenforcement* of educational and community support and direction for formal and non-formal EE programmes at the national and local levels.

D. Research

There is a need for: (1) extensive research related to EE development of the *youngest learner,* with emphasis on developing the earliest childhood awareness of the environment; (2) research into the use of inexpensive and applicable teaching *methods* and educational *technologies* in learning and instruction as related to EE; (3) research into the use of *non-school learning environments* for EE; and (4) research into the strategic role of information in the *decision-making process* as a part of the development of EE.

E. Development of Environmental Education Programmes

There is a need for: (1) the development of *interdisciplinary* EE programmes; (2) the development of EE programmes which emphasize *problem-solving* methods; (3) the development of EE programmes which emphasize the attainment of environmental *attitudes, values* and *skills* in the learner; (4) the development of EE programmes for *primary-level* pupils; (5) the development of innovative EE programmes for learners at the *secondary level;* (6) the development of EE programmes for the general student at the *tertiary level;* and (7) the development of programmes which introduce awareness of EE principles among the *general public.*

F. Training of Environmental Education Personnel

There is a need for: (1) well-designed programmes aimed at educating teachers and leaders in EE; (2) the development of a greater diversity of *teacher-training programmes* which take into account the fact that the majority of the world's EE teachers are not teaching within any formal educational system; (3) the integration of environmental concepts and techniques into the *training programme of specialists;* and (4) research and the *exchange of information* about ongoing teacher-training EE programmes.

G. Development of EE Instructional Materials

There is a need for: (1) EE *instructional materials* in most countries and for an *exchange of information* about existing EE instructional resources; (2) EE materials which involve not only books but the use of the *entire community as a learning environment* in the

achievement of EE objectives; (3) encouragement of the use of *mass media* as an important instructional resource for EE purposes; and (4) the training of EE *mass media specialists.*

H. Funding of EE Programmes

There is a need for: (1) *funds* for the development of EE related activities—research, programmes, instructional materials, training courses, fellowships, etc.; and (2) *information* on the *availability* of such funds for the development of these activities.

I. Evaluation of EE Programmes

There is a need to: (1) *create centers of evaluation* of EE programmes, or to establish such centers within existing educational institutions, which would be responsible for coordination of all EE evaluation activities, as well as research and development of new evaluation methods, and the training of EE evaluation personnel; (2) *incorporate evaluation activities* in all EE programmes which would direct the selection of EE programmes, guide them during all their processes towards the achievement of their intended objectives, and appraise their terminal effectiveness and efficiency; (3) *survey* existing evaluation methodology and techniques applicable to EE; (4) *produce* a basic manual of evaluation methodology for EE practitioners; and (5) widely *disseminate* such information.

A Global Network of Environmental Information

Earthwatch is the ambitious code name for the global environmental assessment programme of UNEP—UN Environment Programme—which had been proposed by the UN Conference on the Human Environment in Stockholm, 1972. Of the four Conference-recommended components of Earthwatch—monitoring, evaluation, research, exchange of information—three are now being implemented: (1) the Global Environmental Monitoring System (GEMS), (2) the International Registry of Potentially Toxic Chemicals (IRPTC), and (3) the International Referral System (IRS).

Countries with IRS Focal Points

Argentina
Australia
Austria
Bangladesh
Barbados
Belgium
People's Republic of Benin
Bolivia
Byelorussian SSR
Canada
Colombia
Cyprus
Denmark
Ecuador
Arab Republic of Egypt
El Salvador
Ethiopia
Finland
France
Gabon
Ghana
Greece
Hungary
Iraq
Ireland
Israel
Italy
Jamaica
Japan
Jordan
Kenya
Libyan Arab Republic
Democratic Republic of Madagascar
Malawi
Malta
Mauritania
Mexico
Netherlands
New Zealand
Niger
Nigeria
Norway
Pakistan
Philippines
Poland
Portugal
Romania
Senegal
Sri Lanka
Sweden
Switzerland
United Republic of Tanzania
USSR
United Kingdom
U.S.A.
Upper Volta
Venezuela
Zaire

IRS

Of particular importance to environmental educators, planners and others is UNEP's IRS, whose full name spells out its indispensable function—the International Referral System for Sources of Environmental Information. Note that it provides *sources* of information and not the information itself.

The product of over two years of planning and consultation with governments, research institutes and other organizations with pertinent experience, IRS with some *sixty* IRS national, regional and sectoral *focal points* is now approaching functional operation throughout the world.

The "focal points"—at least one per participating UN Member country—are growing in number. In the initial phase each develops its own national system of information on the environment. It then sends the unrestricted data to UNEP's IRS headquarters in Nairobi, where the data are stored and made available to other focal points in the system. Each focal point thus contains its own national information as well as *all* the cataloged information of the IRS headquarters unit, sent to it as a computer tape, microfiche or printed and indexed directory.

How to use IRS

UNEP prefers people addressing queries to their own country's focal point rather than to the IRS headquarters unit. The list of participating countries is contained in a box on this page. If your country is on the list and you wish to contact its focal point, write for the name and address to: *Director, IRS, UNEP, P.O. Box* 30552 *Nairobi, Kenya.*

The IRS system is designed principally to service governments and major international nongovernmental organizations. Members of these bodies in countries *not* served by a national IRS focal point may make inquiries directly to UNEP/IRS headquarters in Nairobi. Other individuals in the same situation are advised to make their inquiries for environmental information through the proper governmental office or environmental organization.

Note again that focal points, too, provide only *sources* of information. To collect all information on the environment into one vast data bank and constantly update it would be an impossible task. IRS and its focal points, consequently, are best thought of as a *catalog* of names and addresses of possible sources for the requested information.

The best use of IRS, furthermore, is to ask fairly specific questions of it on a particular subject rather than on an entire discipline. For instance, the system responds well to such queries as "Whom should I contact to find out how governments are handling the problem of conserving wild animals as well as expanding cultivatable land?" It does less well with such questions as "Where can I find information as to how governments are programming in-school environmental education?"

In practise, a question is coded for a computer (or manual) search of the IRS directory for the source or sources with the likely capability of supplying the answer or answers, e.g., a laboratory, research institute, university department, etc. The reply contains the names and addresses of such sources, their capabilities, and the conditions of availability of the requested information (cost, format, quantity, etc.). The *referral* service itself is free. In most cases, however, payment must be made to the sources ultimately supplying the information.

An IRS Operations Manual is available at IRS national focal points in the four working languages of the system—English, French, Russian and Spanish.

"IRS," says a UNEP official, "is anxious to know about you, too. If you have anything to add to the total stock of information on the environment, contact your national IRS focal point and make your contribution."

Reader-to-Reader Forum

Launching the reader-to-reader forum is a long letter from the World Confederation of Organizations of the Teaching Profession (WCOTP) with 5 million teacher members represented by their national organizations. It reads:

The vision of "a global framework for environmental education" postulated by the Belgrade Charter (*Connect*, No. 1) is shared by WCOTP, whose 25th Annual Assembly in Washington, D.C., this coming August will be devoted to the theme, Education for a Global Community. Issues raised by the UN Declaration for a New International Economic Order—including the "new global ethic" sought by the Belgrade Charter—will be discussed by the leaders of teacher organizations around the world.

WCOTP has already manifested its commitment to the principles and practise of environmental education. At the European Conference last November, a recommendation was adopted which stressed that general education "should make pupils aware of the importance of the conditions in which technologies are conceived and applied and of their effects on human life and on the environment... It should also give the student a critical understanding of the environment and its resources and, through development of the ability to anticipate the consequences of introducing new techniques, enable him to make informed and responsible decisions."

There was a further comment on the learning environment: "Special care should be given to the layout of school buildings, workshops and equipment so that they meet the needs of this new general education."

Recognizing that the "global framework" is made of particular local situations, WCOTP has focused on environmental education methodology in East Africa. A seminar on this subject, held in cooperation with UNEP at Mombasa, Kenya, emphasized the TETE (Total Education in the Total Environment) concept of centering curricula on local environments and community resources, of increasing "the extent to which pupils move out of the classroom into the surrounding village, farm and countryside."

One could philosophize endlessly about the issues raised in the Belgrade Charter, but we at WCOTP are sure that, quite rightly, *Connect* will concentrate on action, plans, publications and other "concrete" environmental education phenomena.

Editor: **Right!**

From the General Secretary of Britain's National Association for Environmental Education:

We sincerely trust that amongst all those experts who are presenting papers and submitting evidence on EE (such as the trend paper authors), there are some who are in direct contact with our main consumers—the children of the world. We hope that school teachers are involved. Too often, in our view, the depth of expertise is considered to be proportional to the distance of that person from the classroom. Our Association will be happy always to provide you with contributors "from the coal face."

Editor: **Any comments from our readers? In our own "defense" may we say that nine teachers and one youth leader are among the fifteen authors of trend papers for the Belgrade Workshop of Oct. 1975.**

Speaking of youth, this communication from Hubert Dyasi of SEPA—the Science Education Programme for Africa (P.O. Box 9169, Airport, Accra, Ghana):

The way children learn about the environment and the quality of their knowledge are very important in determining the manner of their interaction with the environment when they become adults. SEPA is devising ways of reaching the very young and their parents to develop in them a constructive awareness about their influence on the environment. Material on resources for increasing people's knowledge of their environment was collected and compiled into a pamphlet. The pamphlet can be used by teachers of environmental science and by teacher trainers.

Several invitations from IYF—the International Youth Federation for Environmental Studies and Conservation:

The 1976 General Assembly of IYF will be at Lohsenstein in the Austrian Alps, 25 July-8 August. People interested can write to IYF Secretary General, Bram Vreugdenhil, Folkingestraat 19, Gröningen, The Netherlands, for information. IYF also invites parti-

cipants to the European Youth Leader Training Course in Norway, 9-23 July. The site will be Nordre Oyern, a wetland area in the mountains, 40 kms. west of Oslo. The programme will consist of field biological investigations devoted to the year's theme—Wetlands. Complete programme on request from Bram Vreugdenhil. Cost of course: about 100 Swiss francs. Deadline for applications: end April (but late readers of *Connect* may still apply).

News from the Committee on Science and Technology in Developing Countries (COSTED, Indian Institute of Science, Bangalore, India):

COSTED has planned a series of meetings on "Resources and Environment: The Role of Science Education." The first was held in Accra, Ghana, January 1975, with emphasis on soil and water. Experts participating suggested appropriate teaching modules for African universities. The second will have taken place during April of this year in Kuala Lumpur, Malaysia, with emphasis on mineral resources and their exploration. The third is scheduled for a Latin American country, end 1976, with a possible focus on marine resources. All three meetings are forerunners for a global get-together on science education and its role in the resource-and-environment planning of the developing world.

EE Experiments Around the World

Forty boys and forty girls of about 14 have just begun an experiment in environmentally integrated and centred education that may well go far beyond the Kenyan village of Kiambu, 13 kms. from Nairobi. The **Kiambu High School** itself is a new concept in architecture—61 interconnecting modules, each 8 meters by 8 meters, each topped by its own peaked roof so that the whole complex has the silhouette of a modernized African village.

The initial boarding students are learning science, mathematics and the humanities in the living context of the rural site and problems of Kiambu—soil erosion, improved coffee crops, etc.—as well as the urban setting and problems of Nairobi—housing, food, production, transportation, community planning, and the like. Their studies revolve around these field trips which include forays into wildlife reserves and local cultures, such as that of the Masai. The educational goal is ambitious and direct: "to impart knowledge and skills which enable the school-leavers to solve problems with resources available in their environments."

Environment is viewed as the integrating theme in an all-round, lifelong education. Teacher training is part of the environmentally centred experiment, as is the development of EE instructional materials and programmes. Integrated curricula, continual evaluation, interdisciplinary cooperation and community involvement best describe what the Kiambu school can mean as a model not only for Kenya's secondary schools but for Africa's and others'.

Nineteen **International Youth NGOs** (nongovernmental organizations) held a Working Party on the Environment at UNEP Nairobi Headquarters in March 1976. One of the major issues on the agenda of the meeting was a review of the Belgrade Workshop on Environmental Education.

The Youth participants called upon the UN agencies to intensify their efforts to help governments to develop more relevance in school curriculum to increase awareness and action on global environmental problems. Citing their own grass roots constituencies, the youth organizations urged the UN to create a more "partner-like" process with them in developing out-of-school, informal methods of environmental education.

The Youth Working Party on the Environment concluded with the recommendation that International Youth NGOs be involved in the planning process for future steps in the Unesco-UNEP Environmental Education Programme. This was agreed to in principle by William Stapp of Unesco and John Robertson of UNEP, who participated in the meeting.

Indicating their determination to use practical field project experience in their development of environmental education, the youth organizations decided to co-operate in a rural settlement project in Latin America, an evaluation of co-operative farming activities relative to the environment in the Middle East, an evaluation of the effects of urbanization on the farming areas of Western Europe, and the creation of a Youth Programme at the UN Conference on Habitat in Vancouver.

Mass media are not a special instructional resource for environmental education, but they are central to EE programmes, certainly for the general public. Witness the two widely separated experiences of Czechoslovakia and Maine, U.S.A. With an educational objective in mind, the Czechoslovak National Film Company last year devoted a documentary film to one of the country's "landscape protected areas"—similar to the "biosphere reserves" promoted by Unesco's MAB Programme—with considerable effectiveness.

The Maine (U.S.A.) Public Broadcasting Network recently organized an experimental project using simulated models as part of a viewer-participation exercise. A series of TV programmes—"The Land and Me"—presented alternative uses for a simulated parcel of Maine territory. Viewers, at their request, received free of charge guides and a land-use game. Following each programme they voted on alternative uses of the land shown to them by phoning in their choices.

Editor: **News of other EEE—exciting environmental education—projects and experiments are warmly welcome.**

Training Activities of the Man and the Biosphere Programme (MAB)

Since its inception, Unesco has been deeply concerned with the problems of the training of specialists in the field of the natural environment and it resources. Today it is the Division of Ecological Sciences which administers the intergovernmental and interdisciplinary Programme on Man and the Biosphere (MAB), and is responsible for such activities. These problems are approached in part through making available study grants for *in situ* training and through providing assistance to countries for the planning of their research and training facilities. In addition, three main types of training courses are organized or sponsored, namely, ongoing international post-graduate courses in European countries for students from developing countries (Sheffield, U.K.; Enschede, Netherlands; and Montpellier, France), *ad hoc* international postgraduate training courses organized in developing countries themselves (Kenya, Philippines, Venezuela), and short seminars for research scientists, resource managers and decision-makers (Indonesia, Iraq, Senegal, Thailand). Details of these activities will be provided in future issues of *Connect*, as well as information on MAB publications which are of interest to educators.

Happy Birthday

The 30th anniversary this year of Unesco's creation coincides exactly with its concern about the environment and education for its safeguarding and improvement. For the Organization's first Director-General was none other than the late Julian Huxley, famous biologist, naturalist and humanist. He early expressed "a sense of wonder and deep emotion" for the beauty of the natural world, while sounding a warning about the devastation of its resources and committing Unesco to a programme for its preservation.

Huxley the naturalist and Huxley the international administrator combined perfectly in 1948 to bring the present-day International Union for the Conservation of Nature and Natural Resources (IUCN) into being as a nongovernmental home for concerned scientists. Ever since, the world of conservationists and environmentally aware educators has established links with Unesco which have lasted down to today's Man and the Biosphere activities and the new Unesco-UNEP environmental education programme.

Indeed *Connect*'s own coming into being in 1976 could be said to coincide with Unesco's 30th birthday, if in fact it were only a coincidence rather than continuing evidence of Unesco's environmental and educational concerns, which now engage all its sectors in a global approach. Environment is viewed in its totality, natural and man-made, social, ecological and cultural—in short, all the areas of Unesco's three decades of competence and concern.

Credit: James Aldrich, Executive Director of the Alliance for Environmental Education, Washington, D.C., is currently performing the final editing of the revised Belgrade Workshop trend papers, which will be published by Unesco later this year as *World Trends in Environmental Education.*

On File

This issue should be accompanied by either a pink (for individuals) or blue (for institutions) form to be filled out be those who wish to be part of the Unesco-UNEP international environmental education network. If no form accompanies this copy of *Connect*, it may be procured by writing to the address below.

The detail requested (typewritten, it possible) is vital for the achievement of the network's objectives: (1) to create the mechanism for the exchange of information, ideas and experiences among those recorded in the network; (2) to link individuals and institutions providing services, publications, funds and materials with those who have expressed needs; and (3) to facilitate the task of the Unesco-UNEP EE Programme in coordinating international EE activities.

Eventually computerized, the information will be retrievable for all the Programme's purposes, including the publication of reference books on EE resources—people, institutions, periodicals, funding bodies, etc. Names and addresses (there are currently 5,000 individuals and institutions recorded) will form, as now, the mailing list for *Connect* and other publications of the international EE network.

Previous forms you may have filled out were used to develop the final form (which should accompany this issue). Please fill out the new, definitive form and send, **without folding,** to:

Environmental Education Section
Unesco
7, place de Fontenoy
75700 Paris, France

Save trees. This issue is printed on recycled paper.

Connect is also published in French as *Connexion* and in Spanish as *Contacto*. Contents are exactly the same in all editions, which explains the blank last page in the English edition — that is, to allow the usual expansion when translated into Spanish or French. *Connect* is free. Reproduction of its contents is not only permitted, it is solicited and encouraged.

Connect

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UNESCO-UNEP ENVIRONMENTAL EDUCATION NEWSLETTER

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Buenas noticias de América Latina!

Environmental Education and the Community

The most striking outcome of a three-week, four-nation Latin American workshop held in **Chosica, Peru,** 1-19 March 1976, was the launching of an experimental, one-year programme integrating teachers, students, government officials and community representatives into the life, learning and environmental problems of the community. It may be the prototype for school-community integration in many parts of the world.

Emphasis in the emerging project to be undertaken by each of the four nations—**Cuba, Panama, Peru and Venezuela**—was laid on a realistic problem-solving approach in every school community concerned. Secondary school students and teachers will study the issues of real environmental problems as their subject for solutions: low-income housing, alternative choices for transportation, local air and water quality, solid waste disposal, flood plain zoning, soil erosion and land utilization, etc.—each issue and problem as it actually occurs in their communities.

Specifically this **problem-solving approach** will involve: identification of the environmental problems and issues; collection of information about them (interviews, on-the-spot studies, etc.); organization and analysis of the information; development and evaluation of alternative solutions for the problems; development of plans of action; and finally the action itself (participation in the making of decisions and their implementation).

Cuba, Panama, Peru and Venezuela were chosen to participate in the Chosica workshop because of a common goal in their basic educational reforms: **to put the school at the service of the community**; to create conditions for learning to occur outside as well as inside the school; to link the curriculum to the needs of the community, to the problems as well as the *possibilities* of its environment. Thus the new approach to environmental education particularly benefits from the four countries' national educational reforms.

Each country sent a team of individuals who will also be responsible for implementing the innovative project-programme which came out of the Unesco workshop—and which is already underway in Panama and Peru (this autumn in Cuba and Venezuela). The teams consisted of students, community representatives, teachers and Ministry of Education officials. Observers came from **Argentina, Brazil and Uruguay.**

Programme and project as process

Basic in the design of the EE (environmental education) project that was conceptualized in the Latin American workshop is concrete student/teacher/community member involvement in the project-planning process itself and in the problem-solving approach. Each of the integrated teams of the four Latin American countries is collectively to: (1) identify the community problems to be studied, (2) develop the appropriate curriculum, (3) prepare and train the teachers at the same time, while (4) conducting a continuing evaluation of the environmental education project throughout its implementation.

The entire EE project itself, initially involving one or many more schools in each country (over 40 in Peru alone), was conceived as the **learning process for teacher as much as student,** government official and community member. Students as well as teachers, and the others, are to be closely engaged in problem identification, curriculum development, creation of new instructional materials, continuing project evaluation, and the like, building the commitment and involvement of each participant.

The Chosica workshop itself was conceived as part of the experience, subjecting its participants to virtually the same process that is planned for their own country's phased implementation of the EE project. Visits were arranged to a sugar co-operative and a self-management factory as part of community development programmes in which schools are participating. The point of these visits or study tours was to involve participants of the workshop in the identification and investigation of environmental problems of all kinds in the area. Participants

interviewed members of the community and developed some skill-and problem-solving activities.

The first week—as for the first phase of the project—was spent primarily in **pinpointing environmental problems** in Latin America at the local as well as the national and regional level. Causes and problems, both natural and man-made, were identified, especially in their joint region, and related to the development process. Development on the basis of sound ecological principles was discussed, distinctions always being made between third-world environmental problems and those of the industrialized world.

During the second week, a series of **guidelines** was elaborated and a methodological guide outlined on how best to:

- identify community environmental problems with full community participation
- discuss and develop a pertinent problem-solving curriculum
- ensure a permanent and important time and place in the curriculum for student/teacher/community leader discussion, planning, decision and collective implementation of environmental decisions; this time/place is also to permit in-service teacher training, consultations with outside specialists and coordination of interdisciplinary activities
- ensure a built-in evaluation process throughout the duration of the experimental EE project, conducted by the original team of teachers, students, officials and community representatives. There will also be an intermittent evaluation in all four countries by a visiting Unesco expert.

The third and last week of the Latin American workshop was devoted to each country team working out the details of the experimental environmental education project according to the specific needs and criteria of its country—how the particular institution or school concerned would implement the project in terms of its objectives and in view of anticipated problems and constraints.

Follow-through actions

Participants at the Unesco workshop held in Peru are already sending each other their adapted curricula and plans for their implementation during the one-year experimental period. One theme selected by all is **human settlements.** Each institution will develop this theme in terms of the local community environment. Plans are proceeding for a newsletter in Spanish providing for an exchange of information, didactic materials and experiences as the workshop EE project progresses in each country.

For information about the newsletter, write to: Miguel Azcueta, Av. Larco 1140, Miraflores, Lima, Peru. The complete 50-page report on the innovative Latin American workshop and its evaluation, both in Spanish only, are available for those who would like to organize similar workshops and undertake an experimental project of this kind. The experiment involves an **on-going evaluation** which will be based on the participation of all concerned: parents, community members, students, teachers, directors and Ministry officials. A pre- and post-test evaluation will be carried out, based on several factors, including interviews with participants and the programme's progress. Any questions or comments concerning the project as well as requests for the final report should be addressed to: Environmental Education Section, Unesco, 7 place de Fontenoy, 75700 Paris, France.

Integrating Science Around the Environment

Another Unesco workshop-seminar, held in **Montevideo, Uruguay,** 17-28 November 1975, developed as a workshop project a teaching module for science educators which used the environment as an integrating theme. The workshop project indicates the historical trend towards the thematic use of the environment—its problems, concerns and possibilities—as a core subject for the integrated approach to science and technology education, which is growing throughout the world.

Air, water and soil, energy, transportation and housing, population, ecological balance and harmony—indeed, themes and topics from all the sciences, including the social sciences, and from technology, which relate to the environment, can thus be brought together into **integrated learning materials.** For example, around the theme of water resources—dealing with the real situation in the local community—an interdisciplinary approach could be focussed on the geographic, biologic, chemical and health aspects of the problem through activities involving classroom, laboratory and field trips.

The workshop teaching module itself, which used the environment as an integrating theme, forms part of the 144-page, Spanish-only report of the Montevideo workshop, available from: The Unesco Regional Science Office for Latin America, Casilla de Correo 859, Montevideo, Uruguay.

Available in English and French are three volumes of *New Trends in Integrated Science Teaching* (Vol. II also in Spanish), respectively dated 1971, 1973 and 1974. A fourth volume is to appear before the end of 1976.

This volume, which is subtitled **"Evaluation of Integrated Science Education,"** seeks to present a thorough review and exemplification of current knowledge and practice in the field. The first part of the book consists of chapters on distinct aspects of the topic, such as evaluation of curriculum materials and of teaching skills, review of evaluation instruments, and assessment of student progress in integrated science. The second part comprises six case studies of ongoing evaluation projects in different parts of the world.

Write: Division of Science and Technology Education, Unesco, 7 place de Fontenoy, 75700 Paris, France.

A useful document for secondary school teachers along similar lines sums up a symposium in 1974 on "An Interdisciplinary Approach Towards the Teaching of Natural Sciences at Secondary Level," sponsored and published by the **Council of Europe, Strasburg, France.**

The environment as a theme has its uses as well for a single discipline. The Sixth Biennial Conference of the Asian Association for Biology Education, scheduled for August 1976 in **Bangkok, Thailand,** has as one of its principal themes the teaching of biology in the context of a country's environment.

Regional Needs and Priorities in Environmental Education

The most striking findings of the Unesco-UNEP preliminary world survey of environmental education (EE) needs and priorities on a global level, complete with a chart, appeared in *Connect* No. 1, pp. 3-5. In view of the forthcoming regional meetings (Sept./Nov. of this year), it is appropriate to describe, at least summarily, the principal findings regionally.

The study's findings show **Africa** consistently over the worldwide average levels of stated needs for all EE resources—instructional materials, physical facilities, funds, programmes, etc. In sum, the three most important needs (equal to or greater than 4 on the 1 to 5 questionnaire scale) for Africa are: (1) EE centres, (2) EE organizations and associations for all educational sectors, and (3) EE personnel for all educational sectors except the pre-school level.

The **Arab States** have a level of stated needs for EE funds which is under the world average. The two major needs for this region are: (1) EE organizations and associations, and (2) EE personnel (teachers and other leaders) in four educational sectors: primary-level, secondary-level, out-of-school youth and out-of-school adult.

In the **Asian region,** the major need is for the development of EE programmes for the following educational sectors: primary-level, secondary-level and third-level (for the training of teachers and other professionals).

According to the Unesco-UNEP survey, the **Latin American region** is consistently over world averages for all educational sectors, for all EE resources, except for primary-level programmes. Along with Africa, this region shows the highest level of stated need (compared to all other regions) for out-of-school adult programmes. The lowest level of need is consistently legislation for all educational sectors for the region. The major EE needs are: (1) funds for the development and testing of EE innovations, and (2) personnel, the development of programmes and instructional materials—for all educational sectors.

The **Northern European region** is consistently under world averages for two resources: (1) legislation, and (2) organizations and associations. The need for physical facilities is always less than moderate. The major stated EE needs for Northern Europe are: (1) funds for the development of EE programmes for primary-level, secondary-level and third-level education (teacher-training and other professionals) and out-of-school youth programmes, and (2) consistent with the above pattern, the development of programmes for pre-school education, primary-level education and out-of-school youth programmes.

Western Europe is consistently under world averages for all EE resources. In fact, this region has indicated no "major" needs according to the criterion applied here—equal to or greater than 4 on the questionnaire scale. Nevertheless, Western Europe has still registered important needs. Applying a lower criterion than for the other regions (equal to or greater than 3.5 on the questionnaire scale), a number of needs clearly emerge for the following educational sectors: primary and secondary-level education, third-level education (teacher-training and other professionals) and out-of-school adult education.

Eastern Europe is consistently over the world averages for its expressed need of funds—except for out-of-school adult education needs. The major EE needs stated are as follows—again applying the standard criterion of equal to or greater than 4 on the questionnaire scale: (1) funds for the development and testing of EE activities for all educational sectors, except out-of-school adult education programmes, (2) leadership training programmes in environmental education for all educational sectors, and (3) programmes for second-level and third-level education (for general students, teachers and professionals).

In **Southern Europe,** among all resource areas, the greatest stated need is for funds. The major EE needs are: (1) legislation affecting environmental education (note that this is the only region having a high need for legislation) especially for funds to develop programmes in all educational sectors, and (2) programmes for the following educational sectors: pre-school, first-level, second-level and third-level education (for teacher training).

North America is consistently under the world averages. In North America, organizations and associations, physical facilities and instructional aids are always under moderate (3) levels of stated need. Personnel and programmes, on the other hand, are always over the world averages, except for out-of-school youth. In sum, the major EE needs are: (1) personnel for all educational sectors; (2) funds for programmes in the formal education sectors and (3) programmes for the out-of-school adult education sector and for all formal education sectors.

EE News from Around the World

The **International Council for Adult Education** (ICAE) organized a World Conference on Education and Development, June 21-26, 1976, in **Dar-es-Salaam,** The United Republic of **Tanzania.** The conference, attended by almost 500 adult educators, ministerial officials and senior adult education administrators from over 80 countries, was devoted primarily to the role of adult education and development in the Third World. The keynote address was made by Tanzania's President Julius Nyerere, Honorary President of the ICAE.

One of the conference's ten workshops dealt specifically with adult education and eco-development, that is, development taking into account environmental protection and enhancement. Its recommendations for the promotion of environmental education were unanimously adopted by conference participants and ICAE's Executive Board.

The ICAE, which has member organizations and institutions from every region of the world, formally decided on a global programme to involve the adult education community in EE activities conducted by Unesco and UNEP (UN Environment Programme). Copies of the Belgrade Charter adopted by the International EE Workshop held in Belgrade, October 1975, are being distributed to all member associations. Senior adult educators will participate in the six regional EE conferences to be held later this year.

The ICAE is participating in the design of two pilot EE projects, one in the **Arab world**, the other in **French-speaking Africa**. The Adult Education Council is also involved in designing suitable programmes and curricula in the light of the Belgrade Workshop recommendations. The results of the pilot studies and programmes will be reported to the Intergovernmental World Conference scheduled for June 1977.

The Council further passed a resolution authorizing its Executive Board to study the possibility of holding one global or several regional conferences in 1978 devoted solely to the subject of eco-development, environmental education and the involvement of the adult education community.

Of particular interest to the **African continent**, but of pertinence to all the developing world, is the Dakar-based Environment Training Programme known as ENDA. Established in 1972, it is a joint project of the African Institute for Economic Development and Planning (IDEP), UNEP and the Swedish International Authority (SIDA).

ENDA organizes seminars and training sessions on environment and development, undertakes research and consultations, and publishes documents in the same field, working closely with governments, research centers and universities of most of the African States.

Thus far the seminars and training sessions have brought together over 1 000 cadres, research workers, professionals and teachers on an interdisciplinary basis from the various ecological zones of Africa. Through these seminars and workshops—during which much time is spent in field work—ENDA has identified and developed several **interlocking themes in environmental education** which it is stressing and exploring further:

(1) the vital importance of considering environment and development jointly; (2) knowledge and improvement of the environments specific to each eco-cultural group, including the awakening of people's perception of their environment as well as inventiveness and creativity in using their environmental resources; (3) self-reliance and popular participation as key elements in a strategy of development and equalizing opportunities; and (4) environmental education and training as an essential component of any environment-based, problem-solving action, taking into account the necessity to develop an educational methodology with relevance to existing educational forms—formal or informal, traditional or otherwise.

For lists of publications, seminars, etc., including information about ENDA's quarterly magazine, *African Environment*, write to: ENDA, P.O. Box 3380, Dakar, Senegal. The quarterly appears in English and French; Arabic and Portuguese editions are under preparation.

The first three issues of *Caribbean Conservation News* (Savannah Lodge, St. Michael, Barbados) described the EE programme launched in **Barbados**. No. 4 features an article by Bermuda's David Wingate, Conservation Officer, on environmental education for his country's school children. Since 1972, says Mr. Wingate, **Bermuda** has bent efforts to fill that former lack in the school curriculum.

A voluntary EE committee composed of Education Department Officials and local naturalists and scientists was among the first results. It has since produced a series of teaching kits, complete with visual aids. The initial kit includes colour posters of Bermuda's bird life, reptiles, amphibians, mammals and sea shells, which all schools have been happy to display.

More recently the committee has prepared lecture kits on "Pollution in Bermuda," "Land Use in Bermuda," and the like, which include teaching notes keyed to colour slides. "Some of the kits," writes Mr. Wingate, "are sufficiently general in subject matter to be relevant in schools elsewhere in the Caribbean." Similarly, the Bermuda committee's 45-minute television documentary on its national bird, the longtail or white-tailed tropicbird, has general **Caribbean** usefulness since the bird is common to other Caribbean islands.

Special seminars and training courses have been run for local teachers with particular—and popular—emphasis on the lecture and teaching kits.

Notes from EE Institutions

The 50-year-old **International African Institute** (IAI) has a new Environmental Review Unit. "In fact," Prof. Ade Ajayi, Vice-Chancellor, University of Lagos and Chairman of the IAI, stated in the Institute's magazine *Africa*, "environmental studies were an original concern of the IAI in its early days, particularly as they concerned agricultural systems and new developments in tropical agriculture. The experience of the last two years in the Sahel and elsewhere indicates quite clearly that problems of famine and drought know no national boundaries...

"The individual in **Niger** needs to know what the individual in **Northern Nigeria** is thinking, and the individual in **Senegal**, who is working on similar problems, should also be aware of what is happening as far away as **Somalia**. The new Environmental Review Unit of the IAI has initiated a series of publications in this field, and is preparing an Environmental Studies Register which lists researchers and the work they are currently doing in the environmental field relating to Africa." Social scientists are particularly sought; also natural scientists, such as agriculturalists, nutritionists, meteorologists, etc. IAI, 210 High Holborn, London WCIV 7BW, United Kingdom.

The **United Nations Asian Development Institute** has written concerning its course on "Environmental Aspects of Development," to be conducted by the Institute with UNEP sponsorship from 18 October to 19 November, this year:

"At present our training courses are for planners and administrators in the Asia and Pacific region. Later, however, other types of workshops and seminars may be developed to serve specialists in or related to

the environmental field. We are also collaborating with the Center for Education in International Management (CEIM, 4 chemin de Conches, 1231 Conches-Geneva, Switzerland) in conducting a survey to determine environmental management educational needs, the results of which will be presented at a forthcoming international gathering on environmental education." For more information, write to: Dr. Vinyu Vichi-Vadakan, Director, U.N. Asian Development Institute, P.O. Box 2-136, **Bangkok, Thailand.**

From Dr. John Kirk, Director and Professor of Environmental Studies, Montclair State College, Branchville, New Jersey 07826, **U.S.A.**: "Our School of Conservation is a resident environmental field center. Annually 10,000 students, ranging from 8-year olds to graduate students attend the School with their teachers. They live at the School from two and a half days to five days during the academic year.

"The purpose of their visit is to learn how natural environments serve as part of a life-support system. The classes are conducted in the forest lands which surround the School, and experiences are provided in all subjects found in sciences, social studies; and outdoor pursuits. All classes have a primary focus to develop a deeper awareness and appreciation of the interrelationship and interaction of all living and non-living things." Educators from **Europe, Asia, Africa and Latin America** have worked at the School of Conservation in the past in order to gain experiences transferable to their own situations.

Ms. L.K. Hollanby, Principal, Alnwick College of Education, Alnwick, Northumberland, **United Kingdom** writes: "We at Alnwick have always had links with overseas students and lecturers. We are currently in correspondence with a Canadian and three American universities, all of whom are sending students for tailor-made courses to fit the individual institution, ranging from three weeks to nine months." The setting of Alnwick College, historically, culturally and environmentally, it is suggested, lends itself to ecological studies of the surrounding areas.

A brochure of **The European Institute for Ecology,** rue des Recollets, 57000 Metz, France, reports on its EE activities in an European context: (1) basic and applied research, (2) training of specialists and retraining of professionals and administrators, (3) action upon the surroundings, and (4) diffusion of knowledge in written and spoken form. Three diplomas have been created within the framework of the University of Metz. An international agreement associates the Institute with several colleges and universities of Belgium, Luxembourg and the Federal Republic of Germany.

Prof. P.J. Newbould pens a few notes about the School of Biological and Environmental Studies which is part of the New University of Ulster, Coleraine, **Northern Ireland:**

"In addition to running an Honours B. Sc. course in environmental science, we are able by close links with our education centre to run what is called the 36EO programme, a concurrent Environmental Science and Education degree which gives the successful participant both a degree in Environmental Science and a teaching qualification. We also do a fair number of in-service courses for teachers in various areas of environmental science and some series of lectures and tours aimed at the general public."

From **Australia,** word about the Environment Studies Association of Victoria (ESAV), 324 William Street, Melbourne:

"Each year the ESAV organizes a variety of study courses, most open to any interested member of the public. Courses range from 1 to 3 days (i.e., extending over long weekends) and are of varying types. They include, for instance, environmental surveys of an area; conservation and land use planning of a regional unit; study of the particular ecological problems of a species (e.g., its regenerative or breeding requirements); and also some more innovative, sociologically oriented types of courses directed to alternative life-styles. Target groups range very widely, with special—though not exclusive—emphasis on teachers. Methods and course strategies place the accent on "learning-through-doing."

State of the World's Environment 1975

Every year the **UN Environment Programme** (UNEP) prepares a report on "The State of the Environment"—worldwide—which highlights the main environmental issues of the year requiring the attention of policy-makers and general public. The 16-page, 1976 report is now available (address below) in the five official UN languages. "The report does not suggest solutions; it is designed to stimulate discussion from which solutions may emerge"—thus it is eminently useful for environmental educators as a starting point for a global overview.

"The greatest challenge of today," the UNEP report states early, "is to design development so that it satisfies basic needs—beginning with the eradication of poverty—but is environmentally realistic and does not transgress the 'outer limits' imposed by the capacities of the biosphere."

Similarly the report discusses **social constraints:** "Environmental inequalities in the world are paralleled by economic ones, which are a major obstacle to the satisfaction of basic human needs, especially in developing countries, and a barrier to the harmonious development of humanity." The nuclear arms race, it points out, creates a "potential environmental hazard larger than any other."

After paragraphs on **hunger and population,** there are equally dense passages on **pollution and world climate, pollution and people.** Then the report moves rapidly towards "the better management of the environment" with an analysis of the problem and case-

history descriptions of actions and successes at the international and national levels.

Environmental education and training have a special mention, of particular interest to the developing world: "The experience of the 'green revolution,' for example in **India**, showed that new strains of crop, new schemes of irrigation and other aids to good husbandry succeed only if they are put in the hands of people who are properly trained and organized to use them." Thanks to an ingenious Satellite Instructional Television Experiment (SITE), "a village provided with a television set and accessories (costing about $700), even if it has previously been untouched by modern technology, can tune into programmes in its own language, giving local news, entertainment, and instruction on family planning, nutrition, agriculture and education" —indeed the very elements of environmental education.

For a copy of the UNEP report in English, French, Spanish, Russian or Chinese, write to: Division of Communication, UNEP, P.O. 30552, **Nairobi, Kenya.**

Reader-to-Reader Forum

From R.F. Morgan, Applied Curriculum Development Division, Preston Polytechnic, Chorley Campus, Union Street, Chorley, U.K.:

My hope is that *Connect* will place continual emphasis upon bringing together those of us involved in environmental education at teacher/student level in order to: (1) share ideas and experiences; (2) provide us with information about the things being done by teachers with their pupils and students to attempt to achieve the stated aims of environmental education.

I suspect that many of us are pioneering away at the same things, each in our own compartment, unaware of the things others are doing. Communication would save much duplication and would speed developments at teacher/student level.

Developments at teacher/student level is the phrase which goes to the heart of the matter. Ideas for facilitating, promoting, co-ordinating, formulating and evaluating are fine but we have been producing statements about these intentions, as well as aims, goals and general objectives, for a decade or more. These ideas and statements are the easy part; the real task lies in developing them into environmental education activities for pupils and students.

After some years of working with teachers and pupils in practical curriculum development, including 3 1/2 years co-directing a national environmental education curriculum project, I am firmly convinced that the development of methods, materials and programmes can only be satisfactorily achieved by working with teachers and their students and, indeed, the results will be acceptable to them only if they participate in the devising.

Unless developments occur at this level the aims and other stated intentions produced by high-level workshops and conferences are meaningless. In fact we have a 'credibility gap' between the formulators of policy and the teaching practitioners.

From J.C. Smyth, Paisley College of Technology, Renfrewshire PA1 2BE, Scotland:

Convinced of the need for environmental education, and concerned that the upsurge of interest in its development might be allowed to decline, a group of people professionally engaged in education in the Strathclyde Region of the West of Scotland has been meeting informally to explore ways of fulfilling the aims of the report in spite of the unfavourable economic situation. As well as representing a wide range of educational involvement they represent many of the academic disciplines concerned with the environment and the main achievement of the group to date is probably the establishment of common ground on which all these disparate interests have found agreement. A statement has been drafted of aims and objectives which is perhaps worth quoting as an example of what artists, biologists, economists, geographers, historians, physical scientists, planners, and sociologists can agree on as the basis of a programme...

"The **fundamental relationship of man with his environment**, not basically different from that of any other animal, is seen to be poorly represented by the traditional view; it has to be represented now as an integrated system in which the environment can no longer be thought subordinate. The new approach to education which is thus called for is environmental education. It is needed to restore a proper balance between man and environment by readjustment of traditional attitudes to permit acceptance of constraints imposed by the environment and promote planning on a more realistic basis.

"The **aim of environmental education** as we see it is therefore to enable people to recognize the factors which determine the nature and quality of the human environment so that all may respect and appreciate it to the full, and participate constructively, as individuals and citizens, in its management and development. From it we must learn, in broad terms, four things: to identify, and observe more accurately, the many components of our environment; to understand the inter-relationships and interdependence between these components and ourselves; to evaluate the aims and environmental consequences of our activities; to act, directly and indirectly, in a manner which will ensure the maintenance of a harmonious relationship between humanity and the world in which it lives."

From the Center for Education in International Management, 4, chemin de Conches, 1231 Conches-Geneva, Switzerland:

Through your columns, we would like to make contact with any educational institute involved in environment, development or administration, which would be interested in active collaboration in this International Programme in **Environmental Management Education** (IPEME). Such collaboration would involve carrying out surveys of local educational needs, contributing to workshops, attending special seminars with key personnel from industry and government, helping develop teaching materials and, finally, testing these in locally-run seminars on "Environment and Development."

From the *Environment Liaison Centre*, P. O. Box 72461, Nairobi, Kenya, this information about its function:

The Environment Liaison Board is an international coalition of non-governmental organizations (NGOs) in working relationship with the UN Environment Programme. The Environment Liaison Centre was established here in **Nairobi** by the Board as an independent organization, working closely with UNEP. The Centre enables non-governmental information to reach where it is most needed at UNEP—for instance, the Centre has provided information on energy, whales, the irrational use of resources and the impact of multi-national interests on the environment. The Centre maintains an information and referral service for NGOs and is conducting, with the support of UNEP, an international survey to identify sources of environmental expertise amongst **NGOs.**

OECD and Eavironmental Education

The Paris-based Organization for Economic Co-operation and Development (OECD) has a particularly active Environment Committee with four sector groups on air, water and urban management, and on the "unintended occurrence of chemicals in the environment." These groups frequently publish reports, generally in French and English, of special interest to environmental educators, planners and decision-makers.

OECD's geographical focus coincides with the areas covered by the organization's 24 member states in **North America, Western and Northern Europe, Turkey, Australia, New Zealand and Japan.** Its studies concentrate on the environmental problems of its highly industrialized members and the actions, sometimes coordinated, taken to cope with them. Among its more recent publications are:

Streets for People, 128 pp. Comprehensive urban and transport planning, states this illustrated report, makes it possible to clear the "inner city" of traffic and free it for pedestrian use without disrupting normal activities. Case histories are presented of cities in Europe which have successfully followed this strategy. *Roads and the Urban Environment*, 191 pp., further develops the strategy in terms of protective measures taken by road traffic engineers and urban planners regarding traffic noise and vibration, and air pollution.

Economic costs, a primary consideration for OECD, are featured in *The Polluter Pays Principle*, 120 pp., and *Environmental Damage Costs*, 334 pp. "The polluter pays principle," says the first, "means that the polluter should be charged with cost of whatever pollution prevention and control measures are determined by the public authorities, whether preventive measures, restoration, or a combination of both." Further definitions, recommendations and analyses of case studies follow.

The second OECD publication reviews existing studies on environmental damage costs—both monetary and non-monetary (biological, physical and/or psychological)—so as to provide decision-makers with these factors for consideration as they establish environmental policy objectives. Complex but useful tables and computations complete the paper-bound volume.

OECD's Center for Educational Research and Innovation

A subordinate body of OECD which is fairly well defined by its name—**Centre for Educational Research and Innovation** (CERI)—also issues reports of special interest to environmental educators and planners. Particularly apt are the following:

Environmental Problems and Higher Education, 183 pp. Just published. Based on edited working papers discussed at the Rungsted (Denmark) Conference, June 1974. EE curricula ideas for such learner groups as in-service teachers, specialists and professionals (doctors, nurses, etc.) receive distinctive attention. Case studies are included in each paper.

Environmental Education at University Level: Trends and Data, 322 pp. Examines the state-of-the-art in EE among most member countries of OECD. EE objectives are defined, principles of curriculum planning discussed, and the EE Workshop of Tours, France, 1971 reported upon. Besides a country-by-country survey, special sections describe experimental EE at the University of Wisconsin-Green Bay (U.S.), the University of Waterloo (Canada), the universities of Paris VII and Tours (France) and the universities of East Anglia and Ulster (U.K.).

Environmental Education at Post Secondary Level, 2 vols., 208 pp. and 184 pp. respectively. Vol. 1 is subtitled: The Training of Generalists and Specialists; Vol. 2: Courses for Educators, Decision-Makers and Members of Professions Concerned with the Environment. Vol. 1 brings together twelve case studies undertaken in various institutions of higher education in Australia, Canada, France, Sweden, the United Kingdom and the United States. The studies review recent experiments in the training of future environmental specialists and generalists. Vol. 2 considers case studies in France, Italy, the United Kingdom and the United States dealing with: educators at all levels; environmental decision-makers and professionals, such as engineers, architects, etc., whose work links them to environmental concerns. Each case study involves course content, teachers, research base and instructional materials.

For details, write to OECD Publications, 2 rue André-Pascal, 75016 Paris, France.

Unesco and Biology Teaching

In order to support national efforts in educational renewal and above all the adaptation of education to its social, cultural and ecological content, Unesco, in cooperation with UNFPA, has prepared and published a *Teacher's Guide on the Biology of Human Populations* for each of the two continents—**Africa and Asia**—in both French and English. A version for the Latin American continent will appear at the end of this year, in Spanish.

The aim of the *Guide* is to provide biology teachers with the latest in scientific background material on the many implications of population changes—especially on the possible consequences of demographic growth—and on the relations between people and their environment. Two entire sections are devoted to (1) the Environment of Human Populations and (2) Present and Future Evolution, or Design for Survival, involving ecosystem management and control of environmental quality. (A limited number of copies are available free to teacher-training institutions.)

Parallel to this effort at making biology instruction more effective and relevant, Unesco has been publishing a series entitled *New Trends in Biology Teaching*, whose fourth volume is now appearing. The series has been designed to disseminate information concerning international efforts for the renewal of biology teaching. The latest volume is based on the twelve (revised and edited) trend papers prepared for, and discussed in detail at, the international congress on biology teaching which was held in **Uppsala, Sweden,** 8-12 September 1975. Each of the trend papers examines one of the twelve areas or topics of biology teaching, reviewing, summarizing and analysing trends and developments, identifying issues, problems and challenges, suggesting forms of co-operative action and including a selective bibliography for further reading.

The twelve areas or topics of the last volume of *New Trends in Biology Teaching* cover all age levels, in and out of school, throughout the world. They deal with purposes and objectives, curriculum design, evaluation and dissemination, understanding of the teacher/learning process, the impact of new instructional equipment and educational technology, the contribution of biology to public education and interest, and international co-operation for the improvement of biology education. The volume is particularly useful to educational policy-makers, teachers and planners.

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